

USAWC STRATEGY RESEARCH PROJECT

**ARMY TRANSFORMATION'S IMPACT ON CLOSE AIR SUPPORT TERMINAL
ATTACK CONTROL**

by

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ABSTRACT

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There are inherent dangers of unquestioned adherence to doctrine; however, given historical examples of the success between doctrine and strategy in regards to Close Air Support (CAS) suggests the Air Force work closely with the Army as they transform their brigades to lighter more agile combat units with less organic artillery. Army Transformation's intent is to create a lighter more mobile force, consisting of more combat units. The future Army will not have divisional and corps supporting artillery brigades and this will result in less supporting and reinforcing fires. Engaged brigades will have to depend on their own fire support and Air Force air assets to carry the day. The Army's creation of more combat units will generate a corresponding requirement to increase the total number of Terminal Attack Controllers (TAC) to ensure a sufficient number of TACs are available to support each combat unit as agreed upon in the Army/Air Force Liaison Support Memorandum of Agreement. This project addresses the increased number TACs needed to support Army Transformation and provides recommendations regarding the way ahead and how the Air Force and Army share the burden of providing Joint TACs (JTAC) to ensure effective CAS on future battlefields.

ARMY TRANSFORMATION'S IMPACT ON CLOSE AIR SUPPORT TERMINAL ATTACK CONTROL

President George W. Bush's West Point speech on June 1, 2002 bluntly stated, "America has, and intends to keep, military strengths beyond challenge." As we all know, the security challenges and threats posed to the United States are constantly evolving and changing. The enemies of the United States have learned they can not gather in large groups for fear of being seen by unmanned aerial vehicles and attacked or mass forces and survive large scale force on force battles. They are a "thinking" adversary and are adapting tactics to overcome United States military strengths and capabilities.

It is through great foresight and leadership that the United States enjoys its current position of unparalleled military strength and great economic and political influence. The Secretary of Defense, Donald Rumsfeld, wrote in the 2001 Quadrennial Defense Review Report that the United States needs to maintain its military advantages in key areas and at the same time develop new areas of military advantage and deny asymmetric advantages to adversaries. In short, the United States needs to transform its military to exploit technological and asymmetric advantages well into the future.¹

Army Transformation is rapidly progressing towards that goal. Unfortunately, there seems to have been little initial coordination between the Army and the Air Force regarding Army Transformation initiatives and the unintended consequences of Army Transformation to the Air Force. The Air Force is working hard to play catch up and meet the needs of the Army, but the Army has a 1-2 year head start.

The Army is already transforming and envisions modular conversions being completed by fiscal year 2010 and Future Combat Systems that will put new brigades on the ground starting in 2014. The Air Force made room in the fiscal year 2007 Program Objective Memorandum process to start building up the number of Joint Terminal Attack Controllers (JTAC) and Air Support Operations Centers (ASOC) to support Modular Brigade Combat Teams (BCT). Due to the time involved to fully train and qualify JTACs, Air Force planning and timelines show that it will be fiscal year 2009 before the Air Force can meet the Army's needs regarding requested numbers of JTACs and corresponding ASOCs associated with the new brigade combat teams.²

The Air Force continues to work its own transformation requirements while at the same time taking a proactive role in refining old concepts and doctrine as well as developing new concepts and doctrine to support Army Transformation initiatives. The Air Force is working hard to improve its interoperability with the Army at all levels and remains fully committed to the

Close Air Support (CAS) mission.³ The ability to call and effectively employ airpower in the CAS role is as important now as it ever was in our military's past.

The Air Force is aggressively pursuing the ways and means to support Army Transformation initiatives by increasing the number of JTACs and associated command and control to support one of the Army's Transformation visions: organizational transformation that will consist of more numerous brigades of lighter composition.

The number of CAS sorties or the battle space to be covered due to Army Transformation is not addressed in this monograph; however, the increased number of combat brigades proposed by the Army will require an increased number of Air Force personnel assigned to support those individual Army units. In short, Army Transformation will affect, to a small extent, the number of air liaison officers (ALO) assigned to brigades. Of greater concern is the larger number of Airmen required to provide terminal attack control for CAS sorties.⁴

The character of conflict and threats to the national defense of the United States has changed. The armed forces of the United States must transform to meet the changing threats. However, one constant that will remain is friendly troops on the ground meeting the enemy. The Air Force needs to have the resources available to shape the battlefield, support friendly ground forces conducting offensive operations, neutralize the enemy in defensive positions, and destroy an attacking enemy. Prevailing against adversaries will require new and advanced systems, equipment and techniques as well as old and proven methods. JTACs are vital to linking the Army and the Air Force on the battlefield and ensuring munitions are on target as well as minimizing collateral damage.

The organizational changes proposed by the Army will challenge the Air Force in its ability to provide timely and effective CAS sorties due to projected shortfalls of the number of JTACs required to support Army Transformation. This monograph supports the Air Force's initiative to increase the total number of JTACs who in-turn work hard to ensure the CAS mission is effectively and safely employed. This paper highlights the broad-based scope of the Army's vision of transformation in regards to restructuring and creating new combat units, defines the crucial role JTACs provide to the Army and the requirement for an increased number of JTACs to properly integrate air power with the transforming Army, and concludes with recommendations.

Background Information

The Army has addressed transformation many times throughout history to include "Army After Next" and "Force XXI." The Army is embracing their latest transformation initiatives in

order to meet the new threats and challenges posed by a changing world environment and enemies of the United States. Army Transformation is intended to move the Army from their current force structure to a future force capable of dominating any adversary in the new operational context shaped by precision weapons, information technology and strategic force projection.⁵ Current Army Transformation is a comprehensive reform effort embracing all aspects of the Army to include organizational changes, new and upgraded equipment, and revised doctrine.⁶ The intent of Army Transformation initiatives are to ensure they are prepared for future conflicts by maintaining their current capabilities to dominate any adversary in the new operational context shaped by information technology and precision weapons and to refit and upgrade equipment used in the war against terrorism.

The Army's organizational vision of transformation includes creating Modular combat brigades (a lethal force package that is sustainable and fights as a self-contained unit) as well as a significant growth in the number of Modular combat units known as Brigade Combat Teams or BCT. Transformation will also consist of doctrinal changes in the employment of BCTs. It is the large number of projected BCTs that is causing an immediate disconnect between current Air Force support capabilities and future Army requirements.

Army organizational transformation has two distinct and separate paths that will affect its current force. The first of these changes includes an increase in the total number of BCTs to 70 active and reserve BCTs.⁷ At the same time, the brigades will reorganize into two new types of combat formations: Heavy BCT and Light BCT. To make these new BCTs lighter and more agile on the battlefield, they will constitute a force that is 70 percent smaller in terms of current heavy battalions, 63 percent smaller in terms of heavy companies and 11 percent smaller in terms of infantry battalions. These new combat brigades are lighter than their predecessors being replaced and the Army's doctrinal intent is to disperse these lighter more agile units over a greater area making them harder for enemy forces to find, track and target.⁸

The heavy BCT will have two combined-arms maneuver battalions each with two armor companies equipped with M1 Abrams tanks, two mechanized infantry companies equipped with M2 Bradley infantry fighting vehicles, a strike battalion equipped with self-propelled howitzers and associated target-acquisition equipment, and other elements allowing the brigade to operate relatively autonomously.⁹ The light BCT will have two infantry battalions, a strike battalion equipped with towed field artillery, and various support units.¹⁰

These lighter brigades will come at a cost. They will have less organic fire support directly available thus making them more reliant on other sources for fire support such as Army attack aviation and Air Force CAS. This reduction in indirect fires is critical to making the BCT lighter

and more mobile. As it fights dispersed across the area of operation, it may not be able to receive fire support previously available from division or corps assets. Although these BCTs have organic fires; what they will lack are reinforcing and general supporting fires that would normally come from divisional fires.

The second major change for Army formations is the creation of the Stryker Brigade. Stryker brigades are intended to bridge the gap between the Army's current force structure in light forces, which are easily deployed but not well protected or lethal, and its heavy forces, which are well protected and lethal but not easily deployed.¹¹ Stryker brigades are optimized to operate semi-independently in smaller-scale contingencies and have some organic capabilities that most other brigades would have to receive from higher echelons such as a field artillery battalion.¹² Because the Stryker brigade is expected to operate independently in many smaller-scale contingencies, these capabilities have been integrated into its organization.¹³

The Stryker and Modular BCTs are lighter than their predecessors resulting in greater speed and agility on the battlefield. The Army plans to take advantage of Stryker and Modular BCTs speed and agility by dispersing these units over more territory than current units.¹⁴ In summery:

- The Army is ambitiously reorganizing its war-fighting units and it's happening now
- By increasing the number of combat brigades into more mobile, versatile units over the next three years, the Army hopes it will generate about 10 more active component brigades within its current end strength
- The Army is restructuring to increase the number of maneuver brigades from the current 33 to between 43 and 48. The 3rd Infantry Division, Airborne Division (Air Assault), and 4ID are at the leading edge of this change.
- The current Army organization will change from divisional to a brigade-based Army
- The Army will take much of the structure in the division, and some at the Corps level, and create powerful, broad-spectrum, brigade-level combat teams that are much more capable of independent action
- Currently, to get a broad-spectrum modular force, the Army starts with a brigade and then will add in all the enablers and then reinforce/task organize as needed.
- BCTs will be permanently task-organized so as to require minimal augmentation, if any. The obvious advantage is the ability to train and work with all of their organic units.
- Divisions/Corps will still have important roles, and will become capable of being used as JTF headquarters as the Army moves to a modular brigade design. There will still

be Corps level entities that will in all probability operate more at the operational level than the tactical level such as a Joint Task Force, Joint Force Commander or Joint Force Land Component Commander.

- A Division will command and control up to six maneuver BCTs and numerous functional brigades.
- The Army is taking major portions of the C2 out of the main command post and building five different types of support brigades, that are more capable, and in some cases may be a supported commander. The support brigades are the Combat Aviation Brigade, Fires Brigade, Sustainment Brigade, Battlefield Surveillance Brigade, and Combat Support Brigade (Maneuver Enhancement).
- Active and Reserve units will have the same organizational designs
- Brigade-sized units will be packaged to deploy more rapidly than Divisions and are capable of “plugging and playing” with any Division or Corps headquarters
- Flexible groupings of modular brigades tailor capabilities to missions; more units create a larger number available to rotate into operations
- The Army is also immersed in an effort to rebalance 125,000 jobs between the active and Reserve components and are working the number of reserve component conversions: The targeted result is 34 fully manned National Guard brigades - about 10 armor, 23 Infantry, and one Stryker brigade.

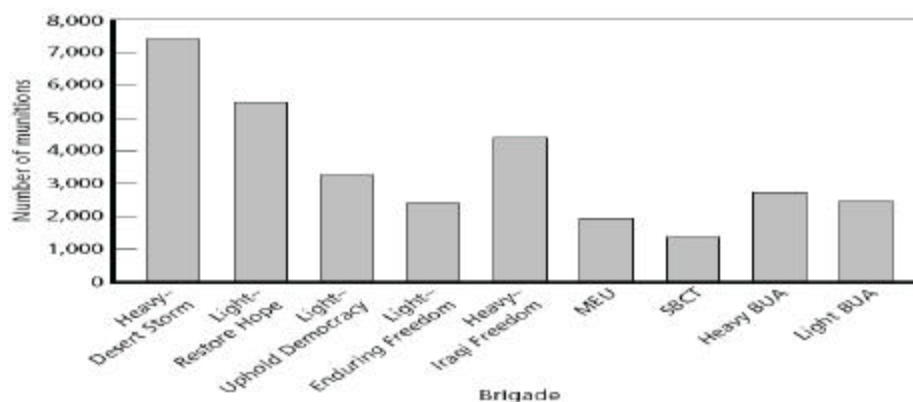
As previously mentioned, these new lighter formations come at a cost. A critical aspect of this new Modular and the Stryker design is that the focus for combat power will be at the brigade and not the division. This means that general and reinforcing artillery support previously received by division and corps artillery units will have to be replaced by either Army aviation or Air Force air support.

The RAND Corporation conducted an artillery fire support study to compare historical fire support to future fires available to the new Stryker brigades and Modular BCTs. The RAND project team quantified the amount of potential fire support capability available to brigade-sized Army combat units during a notional tactical engagement. The results of the study are shown in Table 1 below and reveal that units tend to have greater fire support when they participate in major combat operations, such as Operation DESERT STORM, than they do in smaller contingencies, such as Operation ENDURING FREEDOM.¹⁵ This should not be a great surprise. However, even in major combat operations, fire support potential appears to have been declining over time. Brigades in Operation IRAQI FREEDOM had fewer munitions

available for fire support assets than brigades in Operation DESERT STORM, and heavy Modular BCTs will have fewer still.¹⁶

The RAND study estimated that heavy Modular BCTs will have only 25 percent of the fire support that was provided to heavy brigades in 1991.¹⁷ RAND's analysis indicated that future brigades will have less fire support potential, measured in terms of both the total number of munitions for fire support assets and the weight of fire, than historical brigades had available. This 75 percent reduction in organic fire support along with the greater dispersion of Army units will make them more reliant on Air Force CAS.¹⁸ Air power will be critical to the success or even to the survival of Army formations because the Army will have a greater reliance on CAS to replace previously available organic fire support.

Fire Support Potential, by Number of Munitions



NOTE: Each bar represents one brigade from the sample. Brigades are identified by type (heavy, light, Stryker, etc.) and historical operation, if applicable. Heavy = armor or mechanized brigade, Light = light infantry brigade, MEU = Marine Expeditionary Unit, SBCT = Stryker Brigade Combat Team, Heavy BUA = Heavy Brigade Unit of Action, Light BUA = Light Brigade Unit of Action.

Table 1¹⁹

The Army's vision of organizational transformation will have great effects on the Air Force. Careful and deliberate dialog and coordination must occur between the Army and the Air Force in order to limit the impact on Air Force programs and maintain current capabilities. This is particularly true in order to maintain the improved capabilities and capitalize on the recent lessons learned in the employment of CAS in Operations ENDURING FREEDOM and IRAQI FREEDOM.

Air and space power is tremendously flexible and can perform many operational functions. The Air Force provides seventeen operational functions to the Joint Force Commander. Counterland is one of the operational functions of air and space power and is defined as actions

from the air and or space to dominate the land environment.²⁰ Counterland operations provides the Joint Force Commander two distinct air operations for engaging enemy land forces: CAS and air interdiction. One of the basic capabilities the Air Force provides land combat units is CAS.

America's past war fighting experience has shown the strategic level of war was concerned with the destruction or threatened destruction of the enemy's centers of gravity to include essential war-sustaining capabilities to the point the opponent no longer had the ability or will to wage war. Attacking an enemy's center of gravity is still essential to war fighting; however, the security challenges facing the United States are changing from the more traditional threats such as conventional air, sea, and land forces to irregular threats presented by non-state and state actors employing "unconventional" methods such as terrorism and insurgency to counter stronger state opponents. The United States also needs to be concerned about terrorist or rogue state's employment of weapons of mass destruction or methods producing weapons of mass destruction-like effects against American interests.

The bottom line is that the strategic level of war has become more complicated and difficult to wage against our nation's latest threats: failing nation states and terrorist enemies such as Afghanistan and Iraq. The strategic level of war now has to include the ability for the United States to combat terrorism, support peacekeeping operations, and contingency operations to achieve national objectives with direct and indirect asymmetric applications of the United States military and other national resources in operations short of current conventional, symmetric concepts of war. This will require the Air Force to remain flexible in its ability to project symmetric and asymmetric airpower around the globe. The Air Force needs to retain basic capabilities of conventional warfare in order to successfully defeat the enemy if he makes it to the battlefield to face our ground troops.

Airmen have been providing CAS to friendly ground forces since World War I. The ability of air power to support friendly ground forces has greatly improved over the years due to developed and refined doctrine, tactics, techniques and procedures. The terminal attack controller, now known as a JTAC²¹, is one aspect that has greatly improved the effectiveness of CAS and has been instrumental in directing air strikes against the enemy from a forward position for many years.

Clearly, military force can be detrimental or inappropriate to some objectives, especially if the force used is perceived to be disproportionate to the objective. When the use of the military instrument of power is appropriate, the enemy should be positively identified, objectives clearly stipulated, forces and supporting resources appropriately allocated, and restrictions and

limitations delineated. Modern technology enables lethal force to be applied more precisely, thus helping to minimize collateral damage and reduce the potential for inadvertent alienation of the civilian population.²² JTACs, on the ground with Army units engaged with the enemy, greatly aid in achieving objectives and desired effects against the enemy while adhering to restrictions, limitations and minimizing collateral damage.

The JTACs' mission is a highly demanding and often complex. JTACs understand the ground commander's situation and intent. They are experts in the tactical application of air power, have terminal attack control authority which is paramount to the safety of our own troops and aircraft. At the same time, JTACs ensure positive target identification, desired effects against the enemy are achieved and that proportionality with minimal collateral damage is maintained.

Terminal attack control may be accomplished by airborne fighters such as Forward Air Controllers (FAC) or ground based ALO as well as JTACs. The JTAC is an air power expert and is familiar with the capabilities and limitations of aircraft platforms, delivery tactics, and the characteristics of the many different munitions now available for ground attack missions. The bottom line is that the JTACs are the vital link between Army ground maneuver units and airborne firepower.²³

Advances in technology have made vast improvements in weapon delivery systems and munitions thus improving the effectiveness of CAS. Platforms such as the A-10 went from "iron sights" to computer aided sights resulting in the ability to more precisely employ the gun or deliver bombs in support of ground troops. Technology has been applied and has vastly improved the capabilities of munitions such as the 500-pound bomb used in World War II. The old "dumb bomb" can be made into a precision-guided weapon (also known as a smart bomb). The ability to make a smart bomb is made possible by technological advancements such as the development of laser designators and the network of global position system satellites. Precision weapons can also be made by fitting a global position system receiver and fins on a bomb. Basically, technological advances in the aircraft as well as the ordinance have made the use of aerially delivered ordinance for the purpose of CAS much more feasible now than in the past.

Operation DESERT STORM and more recent operations in Afghanistan and Iraq have proven the importance as well as intricacy required to properly integrate air power with friendly ground forces.

The JTACs Role Defined

JTACs are the vital link between ground maneuver units and airborne aircraft providing CAS. These personnel are specially trained, qualified, certified and authorized to direct combat aircraft engaged in CAS and other air operations.²⁴ They are the link between ground maneuver units and all the air and space power capabilities the Joint Force Air Component Commander (JFACC) can posture to optimize support. The JTAC is an expert in the tactical application of airpower and is familiar with the capabilities and limitations of aircraft platforms, delivery tactics, and the characteristics of the many different munitions now available for ground attack missions.²⁵ While directing CAS sorties is 90 percent of what JTACs do, they also provide Intelligence, Surveillance and Reconnaissance (ISR) support and requests for unmanned aerial vehicle support.

All services are participating in and or have their own JTAC training programs. The Joint Close Air Support executive steering committee directed the creation of a Joint Close Air Support standardization team to perform accreditation of JTAC qualification courses. JTAC training is standardized across the services under the Joint Close Air Support action plan.²⁶ Current joint procedures state that only certified JTACs, ALOs, Battalion Air Liaison Officers, or airborne fighters such as FACs have terminal attack control authority (weapon release authority in non-emergency CAS missions).²⁷ In other words, JTACs, ALOs, Battalion Air Liaison Officers and FACs have the authority to direct aircraft to maneuver into a position to deliver ordnance, passengers, or cargo to a specific location or target. They have the training and according to joint procedures, are certified and granted the authority to control the maneuver of and grant weapons release clearance to attacking aircraft.²⁸ JTACs link Army ground maneuver units to airborne firepower.

Joint Publication 3-09.3 further states that a JTAC is a trained, qualified and certified Service member who, from a forward position, directs the action of combat aircraft engaged in CAS sorties and other offensive air operations. A qualified and current JTAC will be recognized across the Department of Defense as capable and authorized to perform terminal attack control.²⁹

Standardized training ensures all JTACs are capable of providing effective terminal attack control for all counter-land operations, particularly CAS. The complexity of integrating CAS with the fire and maneuver of friendly forces requires a detailed understanding of air and space power.³⁰ The Air Force training model for JTACs is a 3-phased approach. Phase 1 training is completed at the candidates' home station where they are considered a JTAC apprentice. They must accomplish academics as defined in a comprehensive master task list, accomplish a

minimum of four graded CAS controls and four CAS control simulator missions; phase 2 training is accomplished at the Air Ground Operations School located at Nellis Air Force Base in Nevada and consists of academics, four graded CAS control simulator missions, and four graded CAS control missions (minimum); phase 3 training is completed at the candidates home station where they accomplish mission qualification training which entails another four successfully graded CAS controls followed by a mission checkride.³¹ Successful completion of the mission checkride results in JTAC certification.³²

It typically takes up to two years for a JTAC candidate to complete all three phases of training to become a certified JTAC and awarded the Air Force specialty code.³³ After certification, JTACs are required to accomplish a minimum of 12 controls of aircraft dropping live munitions per year.³⁴ The requirements are further broken down to six controls per fiscal year half and at least four must be with fighter/attack aircraft and two may be bomber aircraft.³⁵ This is a minimum requirement of CAS controls and experience has shown a more realistic number of 20 controls per year are required to maintain any real type of proficiency.³⁶

Ground based ALOs, Battalion Air Liaison Officers and JTACs are well integrated within their assigned unit. As such, they work closely with and have an understanding of the unit commander's ground situation as well as the proposed order of battle. This integration with army units give JTACs an understanding of the ground situation and they are able to ensure that aircraft and munitions are appropriate for the mission and generate the desired effect against the enemy at acceptable risk to friendly forces.

Requirement for Increased Ground JTACs

As has already been shown, the Army's current reliance on CAS is on the increase, resulting in a corresponding demand for JTACs. JTACs were well integrated with ground forces down to the company level and instrumental to their unit's successes in Operations ENDURING FREEDOM and IRAQI FREEDOM.³⁷ However, Air Force JTACs are in short supply.

According to Air Force planning factors for each type of Army unit, the pre-transformation Army force structure required 292 two-person JTAC elements.³⁸ Table 2 below illustrates the mix of brigades in the Army force structure and the number of TAC elements assigned to each type of brigade.

Requirement for TAC Elements in Pre-Transformation Army Structure

Type of Army Unit (brigades and brigade equivalents)	Number	TAC Elements Each	Total TAC Elements
Armored, mechanized infantry, cavalry brigade	18	6	108
Light infantry, mountain, airborne, air-assault brigade	15	9	135
Ranger regiment	1	9	9
Special Forces group	5	8	40
Total	39		292

NOTE: Number = number of such units in the current Army structure; TAC Elements Each = TACs aligned with each unit, counted as two-man teams.

Table 2³⁹

According to a RAND study discussing Army Transformation, “The Army has not yet formally articulated its requirement for TACs with Modular BCTs and Stryker brigades, but it will probably be higher than the requirement for maneuver brigades in the current force.”⁴⁰ It should be noted though, that Army planners have reportedly notified Air Force planners that they will likely request a JTAC for each maneuver company in the Modular BCTs and Stryker brigades due to their lighter composition, dispersion tactics and trends previously mentioned regarding firepower.⁴¹ If this is the case, each Stryker brigade would require up to 16 JTAC elements or 32 additional JTACs (see Table 3). This is a total increase from 292 two-man teams to 330 two-man teams or an additional 76 JTACs from an already stressed Air Force career field.

Requirement for TAC Elements with Stryker Brigades

Type of Army Unit (brigades and brigade equivalents)	Number	TAC Elements Each	Total TAC Elements
Armored, mechanized infantry, cavalry brigade	17	6	102
Stryker brigade	5	16	80
Light infantry, mountain, airborne, air-assault brigade	11	9	99
Ranger regiment	1	9	9
Special Forces group	5	8	40
Total	39		330

NOTE: Number = number of such units in the current Army structure; TAC elements = TACs aligned with each unit, counted as two-man teams.

Table 3⁴²

Stryker brigades will add modestly to the requirement for JTACs, but the conversions to Modular BCTs could add dramatically to the requirement, especially when heavy units begin to

convert and when the 10 additional Modular BCTs are created. According to Table 4 below, the Army will be making similar requests to incorporate JTAC elements into Modular BCTs as they are anticipated to make for Stryker brigades. A comparison of Table 2 to Table 4 highlights the dramatic impact Army Transformation could have on the Air Force, if left unchecked, with an increase in total JTAC elements from 292 two-man teams to 657, a total increase of 730 JTAC controllers.

Requirement for TAC Elements with Brigade Units of Action

Type of Army Unit (brigades and brigade equivalents)	Number	TAC Elements Each	Total TAC Elements
Heavy BUA	22	12	264
Light BUA	22	12	264
Stryker brigade	5	16	80
Ranger regiment	1	9	9
Special Forces group	5	8	40
Total	55		657

NOTE: Number = number of such units in the current Army structure; TAC elements = TACs aligned with each unit, counted as two-man teams.

Table 4⁴³

Should the Air Force shoulder the entire increase in the number of JTACs due to Army Transformation? The simple answer is no. However, the Air Force should support a moderate increase in JTACs as well as initiate other programs to reduce the burden on Air Force JTACs.

Conclusions

National military strategy supports national defense strategy across a broad range of security challenges by translating national security strategy and national defense strategy into military objectives, and joint principles, concepts and capabilities for current and future joint war fighting. Security challenges to the United States are constantly evolving and changing. The security challenges confronting the United States are expressed as *Traditional, Irregular, Catastrophic and Disruptive* threats.

The military components of the United States are transforming to meet the ends, ways and means of national military strategy and national defense strategy in order to defeat future threats against our nation. The Army is transforming to meet evolving threats and the Air Force needs to support their initiatives to the maximum extent possible. However, the Air Force cannot be expected to exclusively provide the number of JTACs required by Army Transformation. There needs to be a cost sharing or a sharing of the burden by both sides to meet the *ends*; in this case, a sufficient number of JTACs to support the Army on the battlefield.

The United States fields the most capable military the world as ever seen. The United States military can not settle into complacency and wait for the historic norm-for the high cost of military failure to stimulate change.⁴⁴ Hence, Secretary Donald Rumsfeld and senior military leaders are intent on transforming United States forces to better prepare for the 21st century challenges.⁴⁵ The Services must be flexible and forward thinking in order to meet and defeat any enemy targeting the United States, our Allies and or our forces abroad. The threats facing the United States are numerous as are their weapons and tactics. so we too must change in order to meet these evolving threats.

There are dramatic changes occurring in ground warfare to include Army Transformation and the creation of Modular BCTs and Stryker Brigades. The Modular BCT and Stryker Brigade commander needs to incorporate and effectively utilize all available assets to project combat power or ensure force protection. The rapid pace and the vast amount of information of future warfare will require leaders that are capable of planning, coordinating and executing while on the move. The new Modular BCTs and Stryker Brigades are powerful, light and agile, and will require the proper coordination of all elements of combat power. Increased combat power can be greatly aided by properly integrating Air Force air support, Army aviation, and artillery into the ground commander's plan. The affects produced by the coordinated employment of forces from two or more components of the United States military can be devastating to an enemy.

Technology has given us great capabilities, but these capabilities are useless unless properly coordinated and integrated into the commander's scheme of maneuver. The integration of air power can be accomplished with ALOs, BALOs and JTACs integrated in Modular BCT and Stryker Brigade staffs and units. Soldiers and airmen must work closer together then ever before to accomplish our missions.

The Air Force needs survivable aircraft capable of attacking deep behind enemy lines with precision munitions against our enemy's strategic centers of gravity. The Air Force also needs the capability to support our nation's troops on the ground. The bottom line, our expensive aircraft and precision weapons are useless in a close fight against the enemy if there are no JTACs available to ensure their safe and proper employment.

JTACs play a critical role in the effective employment of CAS. They are a vital link between air and land forces on symmetric and asymmetric battlefields thereby providing the ability to meet desired capabilities and attributes as defined by guidelines in our national defense strategy. The changing security environment, enemy responses to U.S. air power, and Army Transformation initiatives have substantially increased the demands for JTACs.⁴⁶ The expansion of the number of JTACs is currently in progress but there are significant challenges

that must be overcome to expand the JTAC force. The JTAC function is very demanding and relatively few people have the situational awareness and capability to handle the demands of the job. It takes up to two years and considerable training and resources to become a certified JTAC.⁴⁷ To remain certified, JTACs must control a minimum of 12 live controls of aircraft, 8 of which must be fighters each year.⁴⁸ Given the many demands on aircraft, it is unlikely that the number of sorties available for JTAC training can be dramatically increased in the near term.⁴⁹

One of the many challenges to maintaining a proficient JTAC cadre will be the high operations tempo of Air Force aircraft as well as the retirement of legacy fighters such as the F-16 and A-10. As Secretary Rumsfeld wrote in the 2001 Quadrennial Defense Review Report, "...over time, the full promise of transformation will be realized as we divest ourselves of legacy forces and they move off the stage and resources move into new concepts, capabilities, and organizations that maximize our warfighting effectiveness and the combat potential of America's men and women in uniform."⁵⁰

In an effort to maintain a high degree of CAS capabilities, the Army and Air Force need to remain committed to a JTAC program. A *means* to meeting the number of JTACs required to support the Modular Army and upcoming BCTs requires a strong commitment from both the Army and Air Force. Both services need to fully embrace the program and send soldiers and airmen to the JTAC program at the Air Force JTAC school located at Nellis AFB NV.

To help limit the total number of JTACs required to support Army units below the battalion level, consideration should be given to "pooling" JTACs at a central location and deploying them as needed to meet support requirements. By pooling JTACs, the total number of JTACs needed is reduced which in turn lessens the sustainment problem of keeping JTACs current and qualified. Getting JTACs their minimum 12 controls a year will approach critical mass in fiscal year 2011, when JTAC requirements are projected to exceed available air support.⁵¹

Another example of a *means* to offset the need for an increase in JTACs would be to train Army helicopter pilots as FACs with terminal attack control authority. Army helicopter FACs with terminal attack control authority could work with Air Force CAS assets as well as coordinate and ensure flexible and decisive fire power through internal Army assets such as the AH-64.

Recommendations

1. Immediately take actions required to increase the total number of JTACs
2. Ensure terminal attack control standards are uniform across all the services

3. The Army and Air Force contribute soldiers and airmen to a Joint Terminal Attack Controller (JTAC) program. This program should be designed, utilized and resourced by all services.

4. Update the 16 June 2003 Army/Air Force Liaison Support Memorandum of Agreement to include discussion on the specific number of JTACs the Army and Air Force should provide and to what organizational level JTACs should reside.

5. Consider pooling a sufficient number of JTACs in one single unit vice assigning them below battalion level and deploying them as needed to meet support requirements

6. Invest in a sufficient number of advanced terminal attack control simulators to aid in JTAC proficiency requirements

7. Suggest the Army initiate a formal course to train some Army helicopter pilots as FACs.

8. Army Forward Observers assigned to the squad and platoon level should be trained to work with JTACs and authorized to call in emergency CAS if no JTAC is available.

Endnotes

¹ Donald H. Rumsfeld, *Quadrennial Defense Review Report* (Washington, D.C.: Department of Defense, 30 September 2001), IV.

² Curtis V. Neal, ACC/CCJ, telephone interview by author, 27 December 2005.

³ U.S. Joint Chiefs of Staff, *Joint Tactics, Techniques, and Procedures for Close Air Support*, Joint Publication 3-09.3 (Washington, D.C.: U.S. Joint Chiefs of Staff, 3 September 2003), ix. Close Air Support (CAS) is defined in Joint Publication 3-09.3 as, "air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces."

Operation DESERT STORM and more recent operations in Afghanistan and Iraq have proven the importance as well as the intricacy required to properly integrate air power with friendly ground forces. CAS requires detailed integration of air and ground operations to ensure a very high degree of confidence that air-delivered ordnance will strike the correct and only the correct target. Friendly ground forces make it important to deliver weapons precisely and discriminately. Most obviously, the proximity of civilians to the targets being attacked may necessitate as much care and restraint in an attack as would be required if friendly military forces were nearby. Also important in the detailed integration is to make sure there is minimal collateral damage and that our aircraft will not be hit by friendly fire. No other employment of air power requires this extreme and laborious degree of coordination because friendly forces are safely out of the way.

⁴ Ibid., GL-15. Terminal Attack Control is defined in Joint Publication 3-09.3 as, "The authority to control the maneuver of and grant weapons release clearance to attacking aircraft."

Joint Publication 3-09.3 also states that, "Recent technological advances in aircraft capabilities, weapons systems and munitions have provided JTACs additional tools to maximize effects of fires while mitigating risk of fratricide when employing air power in close proximity to friendly forces." Technological advances used to enhance the effectiveness of CAS missions include GPS-equipped aircraft and munitions as well as laser range finders and designators. There are three types of terminal attack control (type 1-3) and each type follows a set of procedures with associated risk. See Joint Publication 3-09.3 page V-14 for additional information on terminal attack control and the three types of terminal attack control.

⁵ Bruce R. Pirnie, et al., *Beyond Close Air Support: Forging a New Air-Ground Partnership* (Santa Monica: RAND, 2005), 93.

⁶ Ibid.

⁷ The final number of BCTs has not been decided upon at time of publication.

⁸ Bruce R. Pirnie, et al., 100.

⁹ Ibid., 99.

¹⁰ Ibid.

¹¹ Ibid., 98.

¹² Ibid.

¹³ Ibid., 107.

¹⁴ Ibid., 100.

¹⁵ Ibid., 106.

¹⁶ Ibid., 107.

¹⁷ Ibid., 108.

¹⁸ Ibid.

¹⁹ Ibid., 107.

²⁰ U.S. Air Force, *Air Force Basic Doctrine*, Air Force Doctrine Document 1 (Washington, D.C.: U.S. Air Force, 17 November 2003), 43.

²¹ JTAC, formerly known as Enlisted Terminal Attack Controller (ETAC), refers to the individual trained and certified as a terminal attack controller. Tactical Air Control Party (TACP) is still the name given to a group of JTACs.

²² Brigadier Nigel Aylwin-Foster, British Army, "Changing the Army Counterinsurgency Operations," available from <http://usacac.leavenworth.army.mil/CAC/milreview/download/English/NovDec05/aylwin.pdf>; Internet; accessed 1 February 2006.

²³ Lt Col Phil M. Haun, USAF, "Airpower versus a Fielded Army: A Construct for Air Operations in the Twenty-First Century," *Aerospace Power Journal* (Winter 2001): 86.

²⁴ U.S. Air Force, *Terminal Attack Controller Training Program*, Air Force Instruction 13-112V1 (Washington, D.C.: U.S. Air Force, 28 September 2005), 4.

²⁵ Haun, 86.

²⁶ Neal.

²⁷ U.S. Air Force, *Terminal Attack Controller Training Program*, 6.

²⁸ U.S. Joint Chiefs of Staff, *Joint Tactics, Techniques, and Procedures for Close Air Support*, Joint Publication 3-09.3 (Washington, D.C.: U.S. Joint Chiefs of Staff, 3 September 2003), GL-15.

²⁹ Ibid., GL-12.

³⁰ U.S. Air Force, *Terminal Attack Controller Training Program*, 4.

³¹ Ibid., 17.

³² Ibid.

³³ Neal.

³⁴ U.S. Air Force, *Terminal Attack Controller Training Program*, 23.

³⁵ Ibid.

³⁶ Neal.

³⁷ Pirnie, et al., 18.

³⁸ Ibid., 145.

³⁹ Ibid.

⁴⁰ Ibid., 146.

⁴¹ Neal.

⁴² Pirnie, et al., 147.

⁴³ Ibid., 148.

⁴⁴ Christopher J. Lamb, "Information Operations as a Core Competency," *Joint Force Quarterly* no. 36 (1st Quarter 2005): 88.

⁴⁵ Ibid.

⁴⁶ Pirnie, et al., 164.

⁴⁷ Neal.

⁴⁸ U.S. Air Force, *Terminal Attack Controller Training Program* , 23.

⁴⁹ Ibid.

⁵⁰ Rumsfeld, V.

⁵¹ Neal.